

Abstract

The present invention relates to pharmaceutical compositions comprising at least one fragment of a polynucleotide, preferably at least one antigen, and optionally a pharmaceutically acceptable carrier and/or diluent. In accordance with the present invention was found that the introduction of the pharmaceutical composition into vertebrates will achieve regulation of growth, induction of cellular transcription and translation, protein synthesis, protein expression or protein secretion. The pharmaceutical compositions are useful in vaccination protocols but also in any other therapeutic situation in which immunomodulation is of benefit, such as sub-optimal immune responses, reaction to pathogens, tolerance or autoimmunity.